DOCUMENT RESUME

ED 413 315 SP 037 624

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TITLE Comparative Study of Expenditures Per Student Credit Hour of Education Programs to Programs of Other Disciplines and Professions.
INSTITUTION Montana State Univ., Bozeman. Coll. of Education, Health, and Human Development.
SPONS AGENCY Teacher Education Council of State Colleges and Universities, Oshkosh, WI.; American Association of Colleges for Teacher Education, Washington, DC.; Association of Colleges and Schools of Education in State Universities and Land Grant Colleges and Affiliated Private Universities.
PUB DATE 1997-00-00
NOTE 45p.
PUB TYPE Reports - Research (143)
EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Educational Finance; *Expenditure Per Student; Graduate Study; Higher Education; Intellectual Disciplines; National Surveys; *Preservice Teacher Education; *Schools of Education; *Teacher Education Programs; Undergraduate Study; Universities
IDENTIFIERS University of Delaware

ABSTRACT

Using 1994-1995 data from the University of Delaware's national database of instructional expenditures and productivity, researchers developed comparative average expenditures across academic disciplines. The data included numbers of undergraduate and graduate credit hours generated and direct instructional expenses for the 1994-1995 academic year by academic discipline. Researchers summarized minimum, maximum, and average expenditures per full time equivalent student. Using those averages, they conducted analyses comparing the average expenditures per student credit hour (SCH) of education programs to the average expenditure per SCH of other academic disciplines, other professional programs, and between education programs in institutions of different Carnegie classifications. Overall, education programs were funded below the institutional average for all disciplines in all Carnegie classifications. Education programs were less well-funded than other professional programs, with the exception of social work and accounting at research institutions. Four appendices provide: (1) a list of participating institutions in the University of Delaware's 1996 National Cost and Productivity Study; (2) classification of instructional programs code taxonomy; (3) research universities average expenditures and percent of total average expenditures per student credit hour, undergraduate and graduate, by discipline; and (4) research universities average expenditures and percent of total average expenditures per student credit hour, by discipline comparison of professional programs. (SM)

Comparative Study of Expenditures Per Student Credit Hour of Education Programs to Programs of Other Disciplines and Professions

Prepared for:

The Government Relations Committee of the American Association of Colleges for Teacher Education,

The Association of Colleges and Schools of Education in State Universities and Land Grant Colleges and Affiliated Private Universities,

and

The Teacher Education Council for State Colleges and Universities

by
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Fall, 1997

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Introduction

For the past fifteen years considerable attention has been given to the reform of public education, including the preparation of teachers. Groups such as the National Network for Educational Renewal, Holmes Group, Renaissance Group, Project 30 and most recently, the National Commission on Teaching and America's Future, have called for major changes in the way teachers are prepared. Among the recommendations are five year teacher education programs, strong partnerships with schools, and better linkages with faculty in the arts and sciences. These changes will require a new and greater commitment to teacher education on the part of colleges and universities.

In the National Commission for Teaching and America's Future report, *What Matters Most: Teaching for America's Future (1996)*, one dean of education described the challenges he faced in seeking accreditation from the National Council for Accreditation of Teacher Education (NCATE). He wrote,

> *Reallocation of institutional resources was critical. Earlier neglect [of teacher education] was replaced by preferential budgetary treatment. Tomorrow's teachers cannot be prepared "on the cheap," or we will get tragically, what we pay for. (P. 71)*

The belief that teachers are prepared "on the cheap" and Schools, Departments and Colleges of Education (SDCE) are "cash cows" for the college or university are widely held among teacher educators. In their 1995 report, *Tomorrow's Schools of Education*, the Holmes Group noted,

> *The education of teachers and other educators is big business in a nation that employs over three-million educators. Dollar signs flash in the eyes of those looking for good market opportunities. (P. 1)*

John Goodlad wrote of the very low status of education on college and university campuses.

> *Those who compare the professions readily separate the strong from the weak. Regrettably, education is usually ranked among the weakest of the weak.* (P. 159)

The perception held by many teacher educators is that the commitment by colleges and universities to Education programs is weak and funding for Education lags far behind that of other disciplines. If education challenges for a new century are to be met, the commitment must be strengthened. Commitment to any program can be gauged at least in part by the level of funding but, few studies have been conducted comparing the funding of Education programs to those of other professional or academic fields.

Ebmeier, Twombly, and Teeter (1991) conducted a study of the comparability and adequacy of financial support for schools of Education at six research institutions. They found that "schools of Education do not hold a favorable position in the research university." (P. 226) Not only was Education less well funded than nearly all other professional or academic programs, in the ten years of the study, Education had actually lost ground in comparative funding.

Ebmeier, Twombly, and Teeter noted that expenditure comparisons from one institution to another are very difficult because of the uniqueness of each institution's financial record keeping systems. This has made large scale expenditure comparisons extremely difficult. As far as the authors of this report have been able to determine, to date, no large scale national study has been conducted to substantiate or refute the claim that Education is poorly funded relative to other professional or academic programs on college and university campuses. We simply do not know how the expenditures in teacher education compares to that of other disciplines or from one institutional type to another.

To address the problem, the Government Relations Committee of the American Association of Colleges for Teacher Education (AACTE) sought and received support from the Association of Colleges and Schools of Education in State Universities and Land Grant Colleges and Affiliated Private Universities (ACSESULGC/APU) and Teacher Education Council of State Colleges and Universities (TECSCU) to fund a study using a national data base which includes over 170 institutions and makes possible the necessary comparisons. Results from this study compare expenditures across disciplines and between teacher education programs from the four major Carnegie Classifications for colleges and universities.

Methodology

A key element in the development of this study was to identify an existing data source, eliminating the need to develop procedures for periodic data collection and maintenance described above. Using an existing data set saved the time and resources required for the development of data definitions and collection procedures. In addition, the data source needed to have promise for continued periodic collection and participation by large numbers of institutions.

Data Source

Several years ago, the Office of Institutional Research at the University of Delaware received a multi-year contract from FIPSE to develop a national database that would support the analysis of instructional expenditures and productivity. The National Study of Institutional Costs and Productivity (NSICP) created a comparative context, wherein a specific academic program's expenditures could be examined and compared with average expenditure indicators by discipline from peer institutions within its own Carnegie Classification, as well as with programs from institutions in other Carnegie Classifications. At this time, several rounds of data have been collected. For this study, data from the 1994-95 academic year were analyzed. At the time of this report, 1996-97 data were in the process of being collected.

Participation in the NSICP is voluntary. In Appendix A, a list of 1994-95 participating institutions by Carnegie Classification is presented. As illustrated, some eighty Research and Doctoral institutions submitted data, representing both public and private institutions. In addition, a number of Comprehensive and Baccalaureate institutions provided expenditure data for this study. While these participants do not reflect a random sample of all higher education, it is felt that average expenditure estimates from this group of institutions provide valid comparative information.

Dr. Michael Middaugh, Assistant Vice President for Institutional Research and Planning at the University of Delaware and Director of the NSICP, anticipates that this data collection will continue into the "foreseeable future." As such, it is felt that this data source will be available

for continuation of this study, allowing for the development of average expenditure indicators over time, from data collected and maintained with consistent definitions.

Data

The data collected at the University of Delaware reflect both productivity and expenditure information, including the number of undergraduate and graduate credit hours generated for the 94-95 academic year and direct instructional expenditures[1] for the 94-95 academic year. (Hereafter direct instructional expenditures will be referred to as "expenditure(s)".) These data were collected for each academic discipline. Disciplines were defined by the Classification of Instructional Programs (CIP), the same taxonomy used for all federal reporting. In Appendix B, the CIP codes are identified with their respective disciplines.

Calculation of Average Expenditures

From the institutional data collected by the University of Delaware's Office of Institutional Research, minimum, maximum, and average expenditures per FTE Student were developed and summarized by discipline and Carnegie Classification (Research I and II universities were combined to form one category – Research Institutions, and Doctoral I and II institutions were combined to form one category – Doctoral Institutions). To be included in the summary information, data from at least five institutions had to be represented in a particular CIP discipline and Carnegie Classification. The average expenditures were developed according to guidelines set forth in a document prepared by the University of Delaware, Office of Institutional Research:

1. An initial mean was calculated from the values for all institutions reporting data within a given CIP program/discipline, within a given category of Carnegie institutions.

2. The standard deviation was calculated along with the initial mean.

3. *Those institutions with values of more than two standard deviations above or below the initial mean were defined as outliers.*

4. A "Refined Mean" was then calculated, excluding outliers as defined above. (P. 1)

These "Refined Means" are the basis of this study.

Average Expenditure Estimates By Discipline

In order to maintain the confidentiality of participants in the NSICP, only summary FTE data as

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[1]The instruction function, for purposes of this study, includes general academic instruction, occupational and vocational instruction, community education, preparatory and adult basic education, and remedial and tutorial instruction conducted by the teaching faculty for the institution's students. Departmental research and service **which are not separately budgeted** should be included under instruction. In other words, department research which is externally funded should be excluded from instructional expenditures, as should any departmental funds which were expended for the purpose of matching external research funds as part of a contractual or grant obligation. EXCLUDE expenditures for academic administration where the primary function is administration. For example, exclude deans, but include department chairs.

described above were provided by Dr. Middaugh for this study. Using minimum, maximum, and average expenditures per FTE Student summary information, analyses were conducted comparing the average expenditures per student credit hour (SCH) of Education programs to the average expenditures per SCH of other academic disciplines, other professional programs, and between Education programs in institutions of different Carnegie Classifications.

It should be noted that the intent of this analysis was to compare the expenditures of different academic programs within different Carnegie Classifications. As reflected by the ranges associated with average expenditures, considerable variance exists across college and university average expenditures within individual academic programs. As such, comparisons of any particular program's average expenditure with the means presented in this report, should be approached with caution.

Comparison of Average Expenditures for All Disciplines by Carnegie Classification

A FTE Student was defined in the NSICP summary report as **equaling 30 undergraduate SCH (USCH)** and **18 graduate SCH (GSCH)**. To estimate the average expenditure of producing an undergraduate credit hour, the average expenditure per FTE Student was divided by 30. Likewise, to estimate the average expenditure of generating a graduate credit hour, the average expenditure per FTE Student was divided by 18 for each discipline within each Carnegie Classification. In this analysis, the first two digits of the CIP code define a discipline. The resulting average expenditures per SCH for each discipline per institutional classification were then compared to the average expenditures for all disciplines within institutional Carnegie Classification (% of Total Average). The % of Total Average figures apply to AVG $/ USCH, and AVG $/ GSCH. These figures are illustrated in Appendix C (1,2,3,4).

The methodology used to calculate the average expenditures per undergraduate SCH and graduate SCH results in a maximum range around the average expenditures of the two levels of instruction. Undergraduate average expenditures assume that all FTE Students were made up of undergraduate SCH, while the graduate average expenditures assume that all FTE Students were developed from graduate instruction. On any given campus, the average expenditures of each of these levels of instruction are likely to fall between these two extremes. In most academic departments, instructional resources are not distinguished by the undergraduate and graduate levels of instruction they support. This difference between the average USCH and the GSCH provides a frame of reference for comparison of average expenditures per SCH for programs at specific institutions.

The same procedure was also applied to the minimum and maximum FTE Student expenditures, to generate minimum and maximum expenditure estimates Range per SCH for undergraduate and graduate credit hours produced. These figures are also illustrated in Appendix C (1,2,3,4).

Comparison of Teacher Education Expenditures to Other Professional Disciplines

In the second analysis, average expenditures per SCH were developed to compare professional programs at both undergraduate and graduate levels. The same definitions and methodology were used as in the previous analyses to calculate the average expenditures. The average expenditures per SCH for these programs are illustrated in Appendix D (1,2,3). No comparisons appear for Baccalaureate institutions as the only professional program in this

Carnegie Classification which met the inclusion criteria was Education.

Comparison of the Percent of GSCH in Professional Programs by Carnegie Classification

In the third analysis, the average expenditure per SCH of Education programs were compared with each other across Carnegie Classifications. The same definitions and methodology were used as in previous analyses. The average expenditures of Education programs for each of the Carnegie Classifications are illustrated in Appendix E.

RESULTS

The purpose of this study was to develop comparative average expenditures across academic disciplines. Review of the information presented in the Appendices allows the reader to compare the average expenditures associated with instruction in Education disciplines to average instructional expenditures of other academic disciplines and between different institutional Carnegie Classifications.

Comparison of Average Expenditures for All Disciplines by Carnegie Classification

Average expenditures per SCH over all disciplines were compared. Consistent with earlier research (AACTE, 1987), the undergraduate average expenditures per SCH at Baccalaureate institutions were the highest ($196) followed by the average expenditures at Research I and II institutions ($163), Doctoral I and II institutions ($147), and Comprehensive institutions ($127). At the graduate level, overall expenditures per SCH were highest at Research I and II institutions ($272), followed by Doctoral I and II institutions ($246), and Comprehensive institutions ($211). (See Appendix C and Figures 1 and 2)

Figure 1

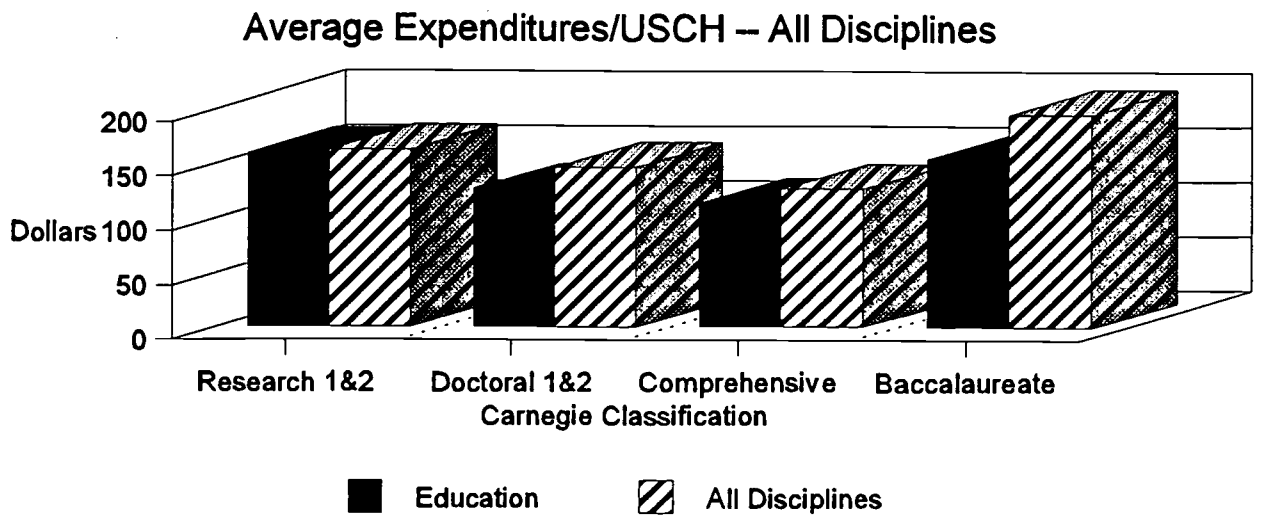
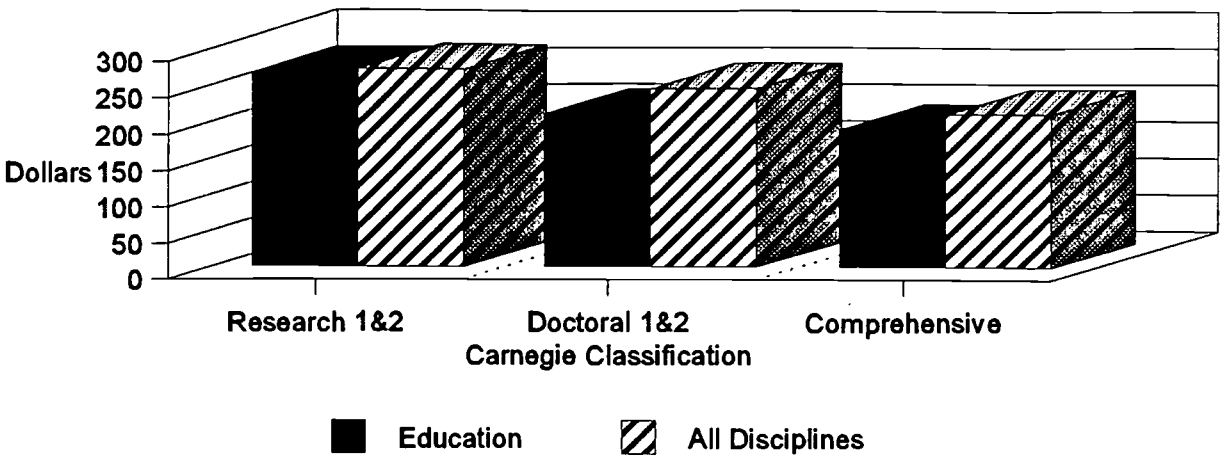


Figure 2



Comparison of Education Expenditures to Other Disciplines

In Appendix C, average expenditures per SCH of all disciplines, as defined by the first two digits of the CIP codes, are presented. For each of the Carnegie Classifications, Education average expenditures were below the average expenditures of all disciplines. At Research I and II institutions, the average expenditure per undergraduate and graduate SCH for Education programs was only slightly below (98.4%) the overall average expenditure per SCH, while within the other Carnegie Classifications, average expenditures per undergraduate and graduate SCH for Education programs ranged between 10% and 21% below the total average. (See Figures 1 and 2)

Variance of Expenditure Per SCH Within Carnegie Classifications

Figures 3 and 4 show the wide variance (Range) of expenditures per SCH within institutional type. Because of these wide variances, comparisons of a particular program's average expenditure with the means presented in this report should be approached with caution.

Figure 3

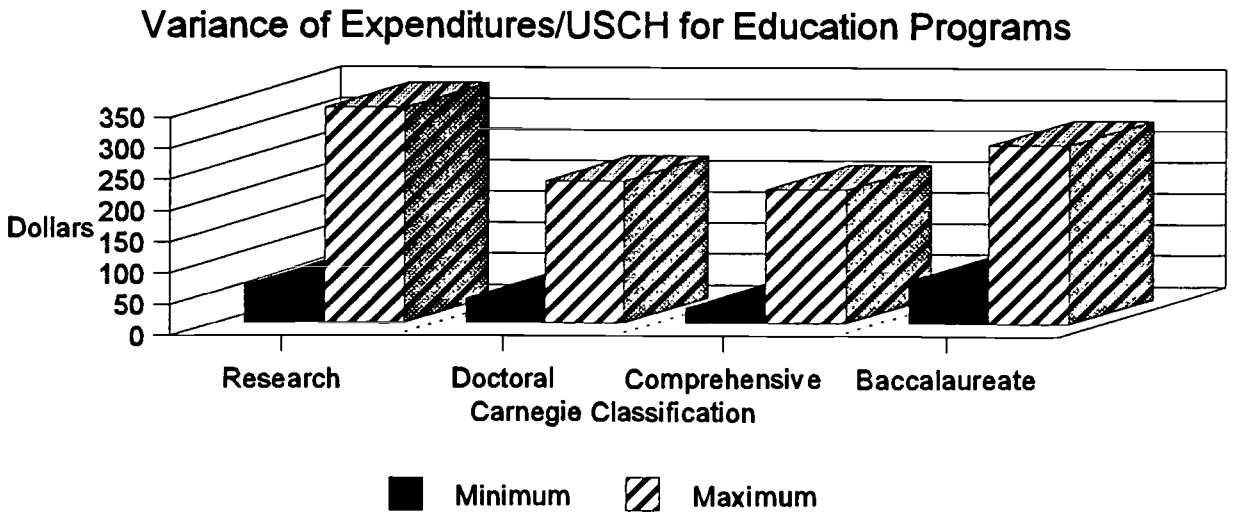
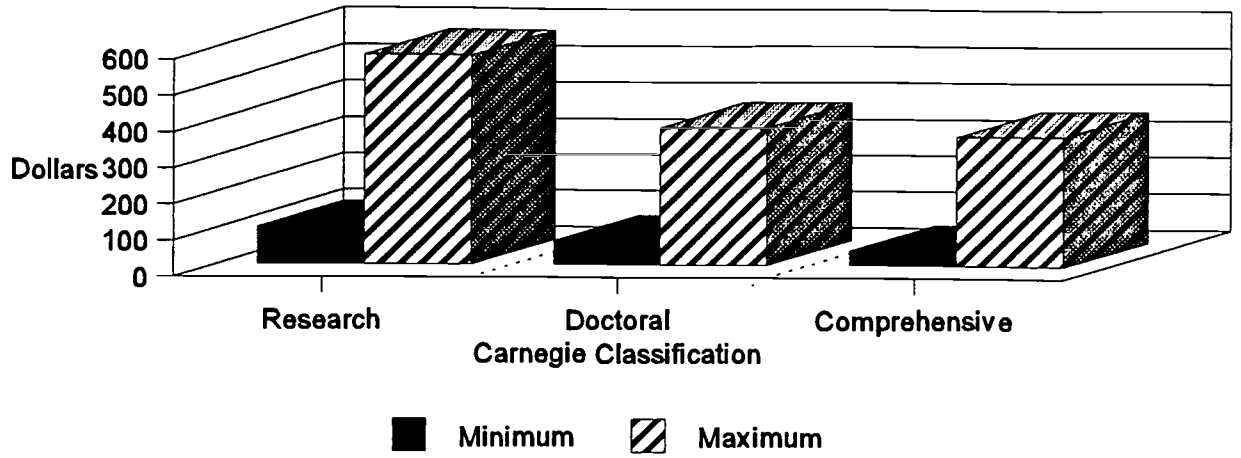


Figure 4

Variance of Expenditures/GSCH for Education Programs

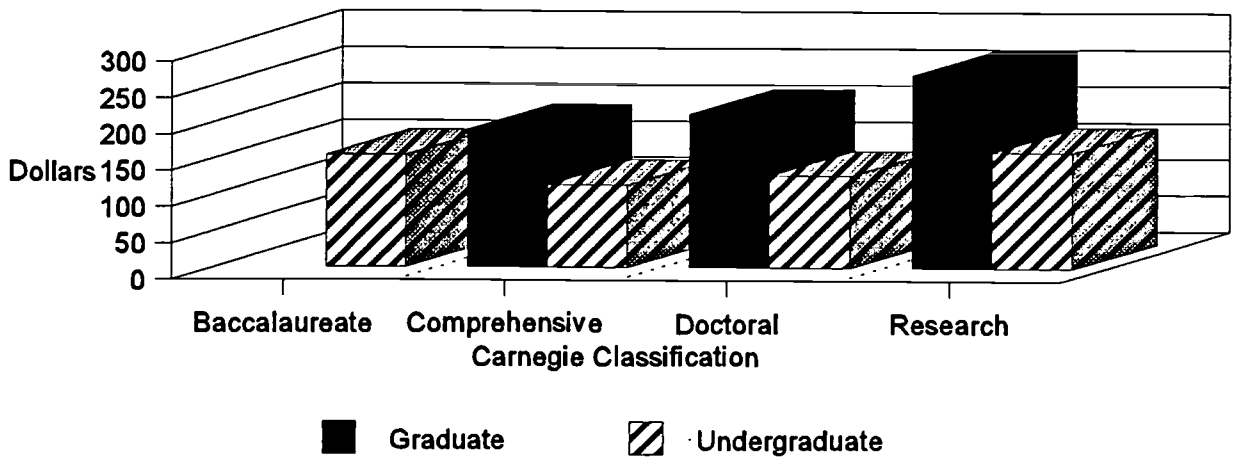


Comparison of Average Expenditures of Education Programs by Carnegie Classification

In Appendix D, the average expenditures for undergraduate and graduate SCH in Education programs are illustrated by Carnegie Classification. The average expenditure per USCH at Baccalaureate institutions ranked second highest ($155) only slightly below that at Research I and II institutions ($160). At Doctoral I and II institutions average expenditure per USCH was $127, and at Comprehensive institutions, $114. At the graduate level, the average expenditures per SCH at Research I & II institutions was $267, at Doctoral I & II institutions, $212, and at Comprehensive institutions, $190. (See Figure 5)

Figure 5

Average Expenditures/SCH for Education Programs



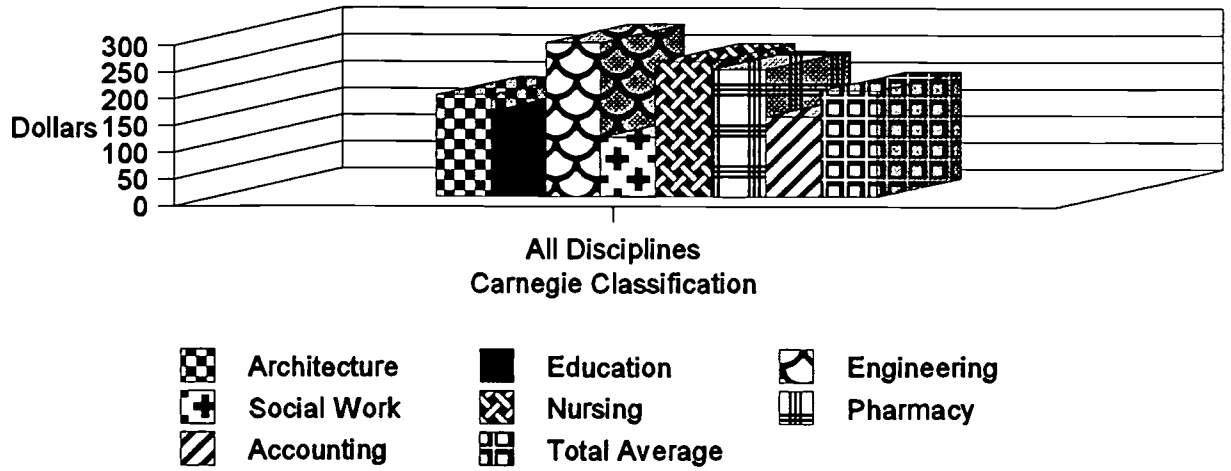
Comparison of Teacher Education Expenditures to Other Professional Disciplines

Teacher education programs were defined in this analysis as all undergraduate programs with a CIP code of 13. In Appendix E, undergraduate and graduate average expenditures in Education are compared to the undergraduate and graduate expenditures of other professional disciplines by Carnegie Classification. It is clear from these figures that Teacher Education (undergraduate) expenditures per SCH are significantly below the average expenditures per SCH of other professional programs compared in this study, ranging from 80% at Research I and II institutions to 69% at Comprehensive institutions. Data were not available for professional programs other than Education at the Baccalaureate institutions. The relative expenditure of the various professional programs at the graduate level would be the same as that of the undergraduate level, the difference being only in the magnitude of the average expenditures. As such the graduate level expenditures were not graphed. The average expenditures can be found, however, in Appendix E. (See Figures 6, 7 & 8)

At research institutions, the total average expenditure per SCH in Education is 80.6% of the mean expenditure for the seven professional programs compared. Average expenditures per SCH in Education ranks fifth lowest among the seven professional programs; the two ranking lower are Social Work and Accounting. (See Figure 6)

Figure 6

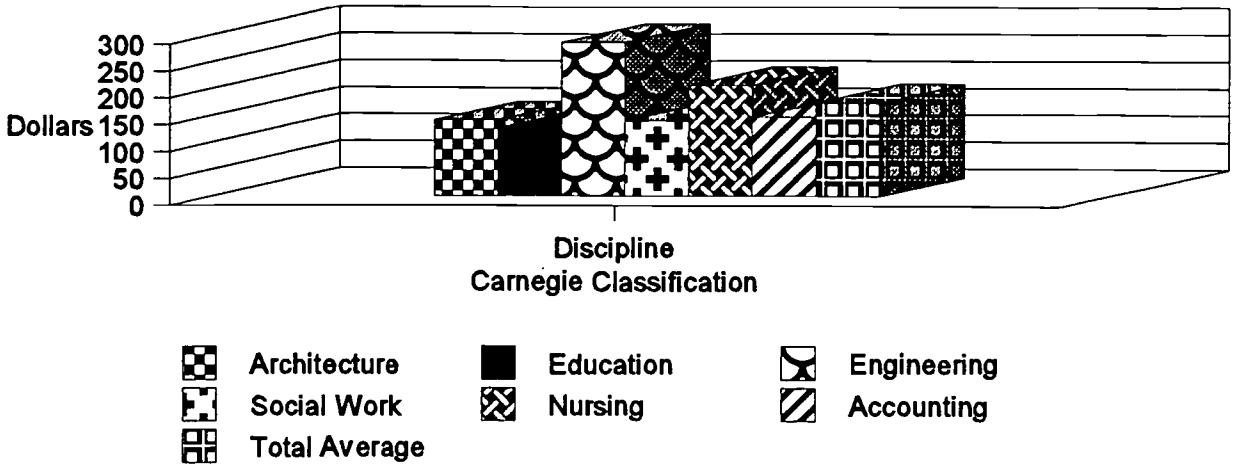
Average UG Expenditures/SCH for Professional Programs at Research Institutions



At doctoral institutions, the total average expenditure per SCH in Education is lowest among all six professional programs compared, 74% of the total average. (See figure 7)

Figure 7

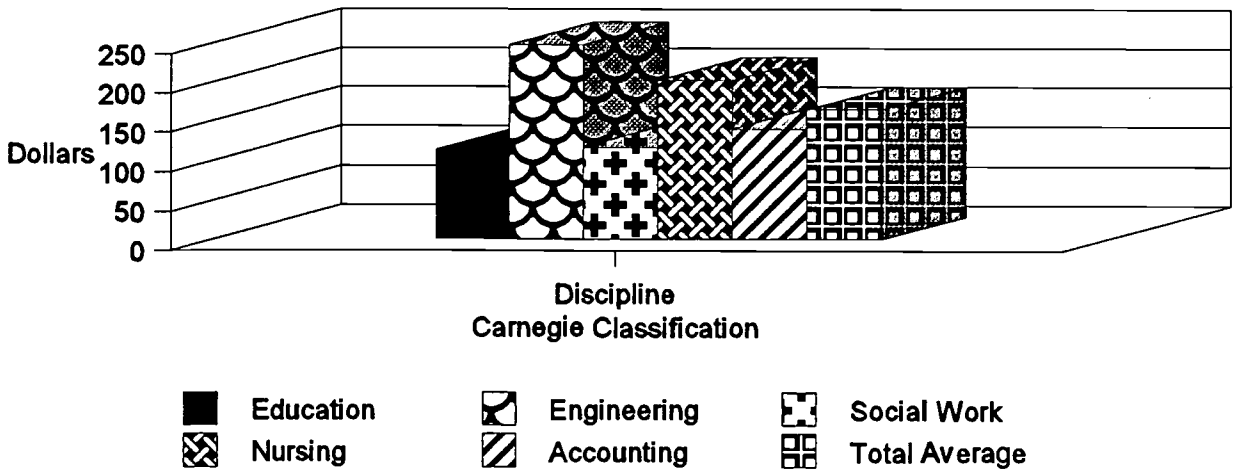
Average Expenditures/SCH for Professional Programs at Doctoral Institutions



At comprehensive institutions, the total average expenditure per SCH in Education is lowest among all five professional programs compared, 69% of the total average for the five professional programs. (See Figure 8)

Figure 8

Average Expenditure/SCH for Professional Programs at Comprehensive Institutions



Comparison of the Percent of GSCH in Professional Programs by Carnegie Classification

Graduate programs are typically more expensive to deliver than undergraduate programs. It

would stand to reason that the overall expenditure per SCH would be greater in departments with higher proportions of GSCH compared to USCH. This is not the case for Education. With the single exception of Social Work in research universities, Education departments have a much higher ratio of graduate to undergraduate SCH than the other professional programs and still, overall expenditures per SCH lag behind the other disciplines. (See Figures 9, 10 & 11)

Figure 9

Percent of GSCH for Professional Programs at Research Institutions

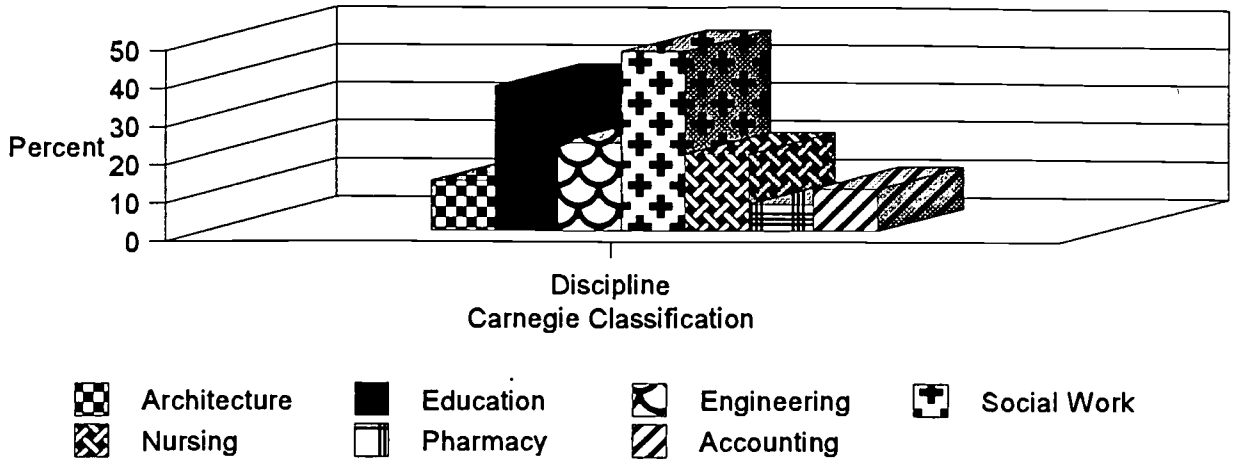


Figure 10

Percent of GSCH for Professional Programs at Doctoral Institutions

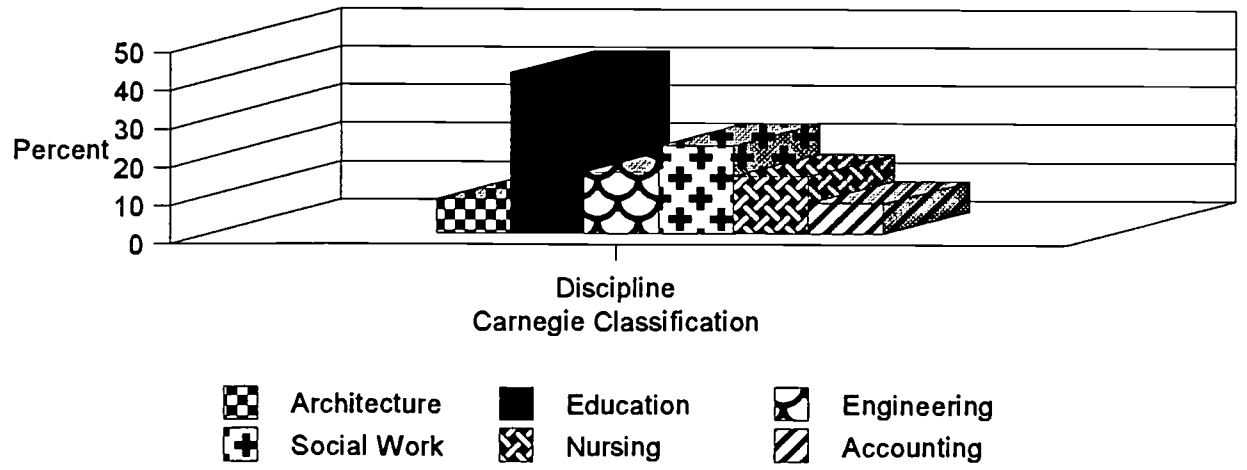
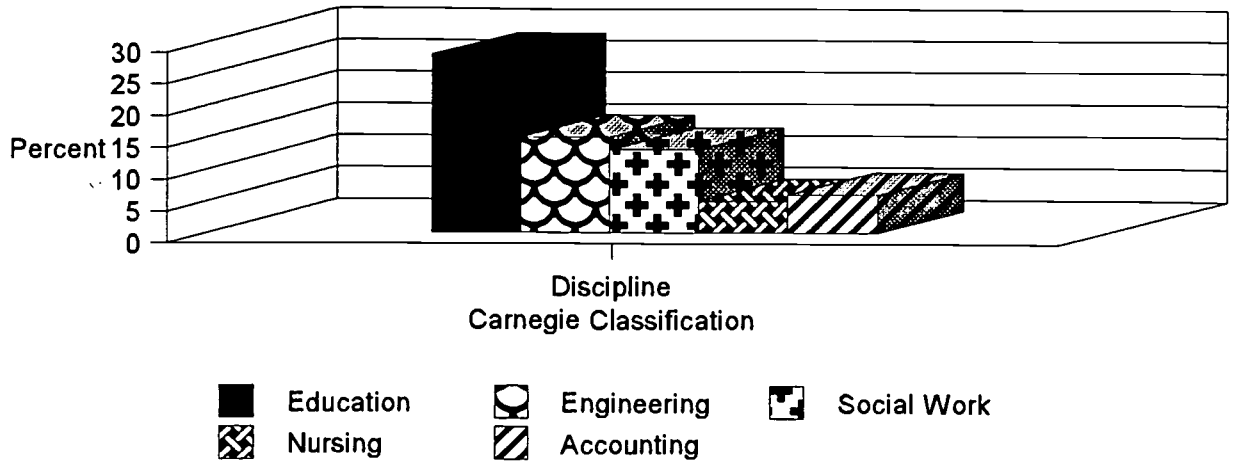


Figure 11

Percent of GSCH for Professional Programs at Comprehensive Institutions



CONCLUSIONS

This study provides clear evidence that, in general Education programs are funded below the institutional average for all disciplines in all Carnegie Classifications. This fact becomes even more significant when we take into account characteristics of Education programs which should make them more expensive rather than less expensive. First, Education programs typically include fewer lower division courses which could lower the expenditure per SCH. Many disciplines such as biology, psychology, sociology etc. are able to reduce their expenditure per SCH considerably by offering general education courses which enroll large numbers of students. These courses are frequently taught by graduate students or adjunct faculty further reducing the overall expenditure to the department. Education departments on the other hand do not typically offer many lower division and high enrollment courses. Second, Education programs are clinical in nature including student teaching and other practicum experiences with low faculty to student ratios which should be more costly. Third, Education programs include a much higher percentage of graduate SCH than other disciplines. Graduate programs are generally more expensive to operate because class enrollments are smaller, and graduate instruction requires faculty to be involved in the time-consuming work of advising graduate students and directing theses and dissertations.

The study also provides clear evidence that, in general Education programs are less well funded than other professional programs with the exception of Social Work and Accounting at research institutions. Again, this fact becomes more significant because, with the single exception of Social Work at research institutions, Education programs include a much greater percentage of graduate SCH than the other professional programs.

This study does not seek to explain why Education expenditures per SCH are so low, a topic which has been addressed to some extent in the literature and should be addressed in future research. Following are some possible explanations for the low expenditures per SCH in Education:

- Teacher Education holds low status on and off campuses. (Goodlad, 1990)
- The teaching profession has not seen fit to promote and require strong accreditation for all preparation programs. Thus, there is little quality control imposed by the teaching profession itself. To date only approximately half of all professional education programs are NCATE accredited. (National Commission for Teaching and America's Future, 1996)
- States have not invested adequate resources into clinical components of teacher preparation programs or induction of first year teachers. (Tyson, 1994 P. 115)
- Education programs lack the autonomy of other professional programs such as law and medicine. (Goodlad, 1990)
- The teaching profession lacks the licensing autonomy of other professions. To date only 12 states have autonomous licensing boards comprised of a majority of professional educators. (National Commission for Teaching and America's Future, 1996)
- Education programs have only recently begun to articulate a clear, consistent knowledge base.
- Education programs are not well understood or appreciated by university presidents or provosts. Few administrators above the dean level on college and university campuses come from the ranks of (SDCEs).
- Education ranks 24 out of 36 disciplines in average faculty salaries in public institutions (NEA Almanac, 1997).
- Faculty whose workloads include nine or more hours in class per week tend to receive lower salaries than colleagues that spend less than nine hours (NEA Almanac, 1997).
- Faculty who teach graduate and undergraduate classes tend to be paid less than faculty who teach only graduate classes (NEA Almanac, 1997).

The best way to improve the quality of P-12 education is to improve the preparation and professional development of teachers. Doing so will require a new commitment to Education programs in colleges and universities. This study provides evidence that, to date, this commitment is inadequate.

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Participating Institutions in the 1996 National Cost and Productivity Study

RESEARCH I

Arizona State University
Duke University
Florida State University
Georgia Institute of Technology
Iowa State University
Louisiana State Univ. & A&M College
North Carolina State University
SUNY - Buffalo
SUNY - Stony Brook
Temple University
Texas A&M - College Station
University of Iowa
University of Kansas
University of Maryland - College Park
University of Massachusetts - Amherst
University of Miami
University of Missouri- Columbia
University of Nebraska- Lincoln
University of Pittsburgh
University of Utah
University of Virginia - Charlottesville
University of Wisconsin - Madison
Utah State University
Virginia Tech. Institute and State Univ.
West Virginia University

RESEARCH II

Auburn University- Main Campus
Clemson University
George Washington University
Kansas State University
Mississippi State University
Northeastern University
Oklahoma State University
Saint Louis University
Southern Illinois University at Carbondale
SUNY - Albany
Texas Tech University
University of Delaware
University of Idaho
University of Mississippi
University of Notre Dame
University of Oregon
University of Vermont
University of Wyoming

DOCTORAL I

Ball State University
Bowling Green State University
Catholic University
Drexel University
Florida Institute of Technology
Miami University
Northern Arizona University
Northern Illinois University
Old Dominion University
Southern Methodist University
SUNY - Binghamton
Teacher's College at Columbia Univ.
University of Alabama-Tuscaloosa
University of Missouri- Kansas City
University of Missouri- Rolla
University of North Carolina - Greensboro
University of Northern Colorado
University of Southern Mississippi
Western Michigan University

DOCTORAL II

Baylor University
Clarkson University
Cleveland State University
DePaul University
Duquesne University
Indiana State University
Indiana Univ.-Purdue Univ. Indianapolis
Michigan Technological University
Montana State University
North Dakota State University
Portland State University
University of Alabama-Huntsville
University of Alaska- Fairbanks
University of Central Florida
University of Colorado - Denver
University of Maine-Orono (Main Campus)
University of Missouri- St. Louis
University of Montana, Missoula
University of New Hampshire
University of Southwestern Louisiana
Wichita State University

COMPREHENSIVE I

Auburn University at Montgomery
Augusta State University
Bloomsburg University of Pennsylvania
Bradley University
Butler Unviersity
California State Univ - San Marcos
Centenary College of Louisiana
Central Connecticut State University
Clarion University Of Pa.
College of Charleston
College of New Rochelle
Creighton University
Delta State University
East Carolina University
Eastern Michigan University
Eastern New Mexico Univ- Main Campus
Georgia Southern University
Ithaca College
Jacksonville State University
James Madison University
Loyola Marymount University
Marist College
Marshall University
Marywood College
Northeast Louisiana University
Northern Kentucky University
Northern State University
NY State College of Ceramics, Alfred U.
Oakland University
Purdue University Calumet
Radford University
Rhode Island College
Rockhurst College
Rollins College
Rowan College of New Jersey
Saint Bonaventure University
Saint Mary's University
San Jose State University
Sonoma State University
Southeast Missouri State University
Southeastern Louisiana University
Southwest Missouri State University
SUNY - Cortland
SUNY - Fredonia
SUNY - Geneseo
SUNY - New Paltz
SUNY - Oneonta
SUNY - Oswego
SUNY - Plattsburgh
SUNY - Potsdam
SUNY - Brockport
Tennessee Technical University
Troy State University
University of Alaska- Anchorage
University of Arkansas - Little Rock
University of Dayton
University of Hartford
University of Houston- Clear Lake
University of Minnesota - Duluth
University of Nevada- Las Vegas
University of New Haven
University of Scranton
University of South Alabama
University of Texas - El Paso
University of West Alabama
University of West Florida
West Chester University
West Georgia College
Western Washington University
William Paterson College
Xavier University of Louisiana

COMPREHENSIVE II

Averett College
Kennesaw State College
Longwood College
SUNY - Institute of Technology, Utica
University of Charleston

BACCALAUREATE I

Carleton College
College of the Holy Cross
Davidson College
DePauw University
Furman University
Hartwick College
Moravian College
Muhlenberg College
Oberlin College
Siena College
Sweet Briar College
University of North Carolina- Asheville

BACCALAUREATE II

Christopher Newport University
Coastal Carolina University
Daemen College
SUNY - Purchase College
University of Maine at Machias

CIP CODE TAXONOMY

01. AGRICULTURAL BUSINESS AND PRODUCTION

01.01 Agricultural Business and Management
01.02 Agricultural Mechanization
01.03 Agricultural Production Workers and Managers
01.04 Agricultural and Food Products Processing
01.05 Agricultural Supplies and Related Services
01.06 Horticulture Services Operation and Management
01.07 International Agriculture
01.99 Agricultural Business and Production, Other

02. AGRICULTURAL SCIENCES

02.01 Agriculture/Agricultural Sciences
02.02 Animal Sciences
02.03 Food Sciences and Technology
02.04 Plant Sciences
02.05 Soil Sciences
02.99 Agriculture/Agricultural Sciences, Other

03. CONSERVATION AND RENEWABLE NATURAL RESOURCES

03.01 Natural Resources Conservation
03.02 Natural Resources Management and Protective Services
03.03 Fishing and Fisheries Sciences and Management
03.04 Forest Production and Processing
03.05 Forestry and Related Sciences
03.06 Wildlife and Wildlands Management
03.99 Conservation and Renewable Natural Resources. Other

04. ARCHITECTURE AND RELATED PROGRAMS

04.02 Architecture
04.03 City/Urban, Community and Regional Planning
04.04 Architectural Environmental Design
04.05 Interior Architecture
04.06 Landscape Architecture
04.07 Architectural Urban Design and Planning
04.99 Architecture and Related Programs, Other

05. AREA, ETHNIC AND CULTURAL STUDIES

05.01 Area Studies (e.g. American Studies, Asian Studies, African Studies, etc.)
05.02 Ethnic and Cultural Studies (e.g., African-American Studies, Jewish Studies, Women's Studies, etc.)
05.99 Area, Ethnic and Cultural Studies, Other

08. MARKETING OPERATIONS/MARKETING AND DISTRIBUTION

08.01 Apparel and Accessories Marketing Operations
08.02 Business and Personal Services Marketing Operations
08.03 Entrepreneurship
08.04 Financial Services Marketing Operations
08.05 Floristry Marketing Operations
08.06 Food Products Retailing and Wholesaling Operations
08.07 General Retailing and Wholesaling Operations and Skills
08.09 Hospitality and Recreation Marketing Operations
08.10 Insurance Marketing Operations
08.11 Tourism and Travel Services Marketing Operations
08.12 Vehicle and Petroleum Products Marketing Services
08.13 Health Products and Services Marketing Operations
08.99 Marketing Operations/Marketing and Distribution, Other

09. COMMUNICATIONS

09.01 Communications, General
09.02 Advertising
09.04 Journalism and Mass Communications
09.05 Public Relations and Organizational Communications
09.07 Radio and Television Broadcasting
09.99 Communications, Other

11. COMPUTER AND INFORMATION SCIENCES

11.01 Computer and Information Sciences, General
11.02 Computer Programming
11.03 Data Processing Technology
11.04 Information Sciences and Systems
11.05 Computer Systems Analysis

13. EDUCATION

13.01 Education, General
13.02 Bilingual Education
13.03 Curriculum and Instruction
13.04 Education Administration and Supervision
13.05 Educational/Instructional Media Design
13.06 Educational Evaluation, Research and Statistics
13.07 International and Comparative Education
13.09 Social and Philosophical Foundations of Education
13.10 Special Education
13.11 Student Counseling and Personnel Services
13.12 General Teacher Education
13.13 Teacher Education, Specific Academic and Vocational Programs
13.14 Teaching English as a Second Language or Foreign Language
13.15 Teacher Assistant/Aide
13.99 Education, Other

14. ENGINEERING

14.01 Engineering, General
14.02 Aerospace, Aeronautical and Astronautical Engineering
14.03 Agricultural Engineering
14.04 Architectural Engineering
14.05 Bioengineering and Biomedical Engineering
14.06 Ceramic Sciences and Engineering
14.07 Chemical Engineering
14.08 Civil Engineering
14.09 Computer Engineering
14.10 Electrical, Electronics and Communications Engineering
14.11 Engineering Mechanics
14.12 Engineering Physics
14.13 Engineering Science
14.14 Environmental/Environmental Health Engineering
14.15 Geological Engineering
14.16 Geophysical Engineering
14.17 Industrial/Manufacturing Engineering
14.18 Materials Engineering
14.19 Mechanical Engineering
14.20 Metallurgical Engineering
14.21 Mining and Mining Engineering
14.22 Naval Architecture and Marine Engineering
14.23 Nuclear Engineering
14.24 Ocean Engineering
14.25 Petroleum Engineering

14. ENGINEERING (Continued)

14.27 Systems Engineering
14.28 Textile Sciences and Engineering
14.29 Engineering Design
14.30 Engineering/Industrial Management
14.31 Materials Science
14.32 Ploymer/Plastics Engineering
14.99 Engineering, Other

15. ENGINEERING-RELATED TECHNOLOGIES

15.01 Architectural Engineering Technology
15.02 Civil Engineering/Civil Technology
15.03 Electrical and Electronic Engineering-Related Technology
15.04 Electromechanical Instrumentation and Maintenance Technology
15.05 Environmental Control Technologies
15.06 Industrial Production Technologies
15.07 Quality Control and Safety Technologies
15.08 Mechanical Engineering-Related Technologies
15.09 Mining and Petroleum Technologies
15.10 Construction/Building Technology
15.11 Miscellaneous Engineering-Related Technologies
15.99 Engineering-Related Technologies, Other

16. FOREIGN LANGUAGES AND LITERATURES

16.01 Foreign Languages and Literatures
16.03 East and Southeast Asian Languages and Literature (e.g., Chinese, Japanese)
16.04 East European Languages and Literatures (e.g., Russian, Slavic languages)
16.05 Germanic Languages and Literatures (e.g. German, Scandinavian languages)
16.06 Greek Language and Literatures (Modern)
16.07 South Asian Languages and Literatures
16.09 Romance Languages (e.g., French, Italian, Portuguese, Spanish)
16.11 Middle Eastern Languages and Literature (e.g., Arabic, Hebrew)
16.12 Classical and Ancient Near Eastern Languages and Literature (e.g., Latin and Greek)
16.99 Foreign Languages and Literatures, Other

9. HOME ECONOMICS

19.01 Home Economics, General
19.02 Home Economics Business Services
19.03 Family and Community Studies
19.04 Family/Consumer Resource Management
19.05 Food and Nutrition Studies
19.06 Housing Studies
19.07 Individual and Family Development Studies
19.09 Clothing/Apparel and Textile Studies
19.99 Home Economics, Other

20. VOCATIONAL HOME ECONOMICS

20.02 Child Care and Guidance Workers and Managers
20.03 Clothing, Apparel and Textile Workers and Managers
20.04 Institutional Food Workers and Administrators
20.05 Home Furnishings and Equipment Installers and Consultants
20.06 Custodial, Housekeeping, and Home Services Workers and Managers
20.99 Vocational Home Economics, Other

22. LAW AND LEGAL STUDIES

22.01 Law and Legal Studies

23. ENGLISH LANGUAGE AND LITERATURE/LETTERS

23.01 English Language and Literature, General
23.03 Comparative Literature
23.04 English Composition
23.05 English Creative Writing
23.07 American Literature (United States)
23.08 English Literature (British and Commonwealth)
23.10 Speech and Rhetorical Studies
23.11 English Technical and Business Writing
23.99 English Languages and Literature/Letters, Other

24. LIBERAL ARTS AND SCIENCES, GENERAL STUDIES, AND HUMANITIES

24.01 Liberal Arts and Sciences, General Studies, and Humanities

25. LIBRARY SCIENCE

25.01 Library Science/Librarianship
25.03 Library Assistant
25.99 Library Science, Other

26. BIOLOGICAL SCIENCES/LIFE SCIENCES

26.01 Biology, General
26.02 Biochemistry and Biophysics
26.03 Botany
26.04 Cell and Molecular Biology
26.05 Microbiology/Bacteriology
26.06 Miscellaneous Biological Specializations (e.g., Anatomy, Ecology, Marine Biology, Neuroscience, etc.)
26.07 Zoology
26.99 Biological Science/Life Sciences, Other

27. MATHEMATICS

27.01 Mathematics
27.03 Applied Mathematics
27.05 Mathematical Statistics
27.99 Mathematics, Other

30. MULTI/INTERDISCIPLINARY STUDIES

30.01 Biological and Physical Sciences
30.05 Peace and Conflict Studies
30.06 Systems Science and Theory
30.08 Mathematics and Computer Science
30.10 Biopsychology
30.11 Gerontology
30.12 Historic Preservation, Conservation, and Architectural History
30.13 Medieval and Renaissance Studies
30.14 Museology/Museum Studies
30.15 Science, Technology, and Society
30.99 Multi/Interdisciplinary Studies, Other

1. PARKS, RECREATION, LEISURE, AND FITNESS STUDIES

31.01 Parks, Recreation, and Leisure Studies
31.03 Parks, Recreation, and Leisure Facilities Management
31.05 Health and Physical Education/Fitness
31.99 Parks, Recreation, Leisure, and Fitness Studies, Other

38. PHILOSOPHY AND RELIGION

38.01 Philosophy
38.02 Religion/Religious Studies
38.99 Philosophy and Religion

40. PHYSICAL SCIENCES

40.01 Physical Sciences, General
40.02 Astronomy
40.03 Astrophysics
40.04 Atmospheric Sciences and Meteorology
40.05 Chemistry
40.06 Geological and Related Sciences
40.07 Miscellaneous Physical Sciences (e.g., Metallurgy, Oceanography, Earth and Planetary Sciences, etc.)
40.08 Physics
40.99 Physical Sciences, Other

41. SCIENCE TECHNOLOGIES

41.01 Biological Technology
41.02 Nuclear and Industrial Radiologic Technologies
41.03 Physical Science Technologies
41.99 Science Technologies, Other

42. PSYCHOLOGY

42.01 Psychology, General
42.02 Clinical Psychology
42.03 Cognitive Psychology and Psycholinguistics
42.04 Community Psychology
42.06 Counseling Psychology
42.07 Developmental and Child Psychology
42.08 Experimental Psychology

42. PSYCHOLOGY (CONTINUED)

42.09 Industrial and Organizational Psychology
42.11 Physiological Psychology/Psychobiology
42.16 Social Psychology
42.17 School Psychology
42.99 Psychology, Other

43. PROTECTIVE SERVICES

43.01 Criminal Justice and Corrections
43.02 Fire Protection
43.99 Protective Services, Other

44. PUBLIC ADMINISTRATION AND SERVICES

44.02 Community Organization, Resources, and Services
44.04 Public Administration
44.05 Public Policy Analysis
44.07 Social Work
44.99 Public Administration and Services, Other

45. SOCIAL SCIENCES AND HISTORY

45.01 Social Sciences, General
45.02 Anthropology
45.03 Archeology
45.04 Criminology
45.05 Demography/Population Studies
45.06 Economics
45.07 Geography
45.08 History
45.09 International Relations and Affairs
45.10 Political Science and Government
45.11 Sociology
45.12 Urban Affairs/Studies
45.99 Social Sciences and History, Other

50. VISUAL AND PERFORMING ARTS

50.01 Visual and Performing Arts
50.02 Crafts, Folk Art, and Artisanry
50.03 Dance
50.05 Dramatic/Theater Arts and Stagecraft
50.06 Film/Video and Photographic Arts
50.07 Fine Arts and Art Studies
50.09 Music
50.99 Visual and Performing Arts, Other

51. HEALTH PROFESSIONS AND RELATED SCIENCES (EXCLUDING MEDICINE AND DENTISTRY)

51.02 Communications Disorders Sciences and Services
51.03 Community Health Services
51.07 Health and Medical Administrative Services
51.08 Health and Medical Assistants
51.09 Health and Medical Diagnostic and Treatment Services
51.10 Health and Medical Laboratory Technologies
51.11 Health and Medical Preparatory Programs
51.15 Mental Health Services
51.16 Nursing
51.20 Pharmacy
51.22 Public Health
51.23 Rehabilitation/Therapeutic Services
51.99 Health Professions and Related Sciences, Other

52. BUSINESS MANAGEMENT AND ADMINISTRATIVE SERVICES

52.01 Business, General
52.02 Business Administration and Management
52.03 Accounting
52.04 Administrative and Secretarial Services
52.05 Business Communications
52.06 Business/Managerial Economics
52.07 Enterprise Management and Operation
52.08 Financial Management and Services
52.09 Hospitality Services Management
52.10 Human Resources Management
52.11 International Business
52.12 Business Information and Data Processing Services
52.13 Business Quantitative Methods and Management Science
52.14 Marketing Management and Research

52. BUSINESS MANAGEMENT AND ADMINISTRATIVE SERVICES (CONTINUED)

52.15 Real Estate
52.16 Taxation
52.99 Business Management and Administrative Services, Other

RESEARCH UNIVERSITIES
AVERAGE EXPENDITURES AND PERCENT
OF TOTAL AVERAGE EXPENDITURES PER STUDENT CREDIT HOUR,
UNDERGRADUATE AND GRADUATE, BY DISCIPLINE

DISCIPLINE(CIP)	N OF PROG	% USCH	% TOT AV	AVG $ USCH	MIN $/ USCH	MAX $/ USCH	AVG $ / GSCH	MIN $/ GSCH	MAX $/ GSCH
AGRICULTURAL BUSINESS AND PRODUCTION (1)	26	88	110.5%	180	87	367	300	144	611
AGRICULTURAL SCIENCE(2)	63	86	112.9%	184	60	351	307	100	586
CONSERVATION AND RENEWABLE NATURAL RESOURCES(3)	30	82	101.6%	166	103	273	276	172	455
ARCHITECTURE AND RELATED PROGRAMS(4)	45	83	117.9%	192	122	276	320	203	460
AREA, ETHNIC, AND CULTURAL STUDIES(5)	23	95	80.9%	132	68	244	220	114	406
COMMUNICATIONS(9)	46	94	87.6%	143	45	238	238	74	396
COMPUTER AND INFORMATION SCIENCES(11)	37	84	108.6%	177	77	307	295	128	511
EDUCATION(13)	123	62	98.4%	160	62	346	267	104	577
ENGINEERING(14)	242	77	176.5%	288	75	588	480	124	981
ENGINEERING -- RELATED TECHNOLOGIES(15)	20	96	99.0%	161	36	276	269	60	460
FOREIGN LANGUAGES AND LITERATURES(16)	87	95	84.9%	138	55	255	231	91	425
HOME ECONOMICS(19)	57	93	82.7%	135	54	274	225	90	457
LAW AND LEGAL STUDIES(22)	23	1	103.9%	169	94	343	282	157	571
ENGLISH LANGUAGE AND LITERATURE/LETTERS(23)	59	94	68.8%	112	57	178	187	95	297
LIBERAL ARTS AND SC., GEN. STUDIES & HUMANITIES(24)	10	98	108.2%	176	70	385	294	117	642
LIBRARY SCIENCE(25)	6	15	108.6%	177	137	269	295	228	448
BIOLOGICAL SCIENCES/LIFE SCIENCES(26)	105	87	108.5%	177	68	518	295	114	863
MATHEMATICS(27)	58	92	75.5%	123	63	220	205	105	366
MULTI/INTERDISCIPLINARY STUDIES(30)	11	50	116.5%	190	83	253	316	138	421
PARKS, RECREATION, LEISURE, AND FITNESS STUDIES(31)	21	92	86.7%	141	66	233	235	110	388
PHILOSOPHY AND RELIGION(38)	55	96	66.7%	109	24	213	181	40	355
PHYSICAL SCIENCES(40)	140	90	132.0%	215	68	694	359	114	1157
PSYCHOLOGY(42)	43	92	69.7%	114	65	190	189	108	316
PROTECTIVE SERVICES(43)	7	88	72.9%	119	72	150	198	119	250
PUBLIC ADMINISTRATION AND SERVICES(44)	35	37	108.0%	176	85	354	294	142	591
SOCIAL SCIENCES AND HISTORY(45)	222	93	74.2%	121	42	251	202	70	419
VISUAL AND PERFORMING ARTS(50)	126	92	114.7%	187	64	353	312	106	589
HEALTH PROFESSIONS AND RELATED SCIENCES*(51)	82	67	136.5%	223	75	472	371	125	786
BUSINESS MANAGEMENT AND ADMINISTRATIVE SERVICES(52)	161	84	91.3%	149	26	270	248	43	450
TOTALS (AVERAGES)				163	69	315	272	115	525

*EXCLUDES MEDICINE AND DENTISTRY

Appendix C (1)

DOCTORAL UNIVERSITIES
AVERAGE EXPENDITURES AND PERCENT
OF TOTAL AVERAGE EXPENDITURES PER STUDENT CREDIT HOUR,
UNDERGRADUATE AND GRADUATE, BY DISCIPLINE

DISCIPLINE(CIP)	N OF PROG	% USCH	% TOT AVG	AVG $ / MIN $/ MAX $ USCH			AVG $ GSCH	MIN $/ MAX $/ GSCH	
				USCH	USCH	USCH	GSCH	GSCH	GSCH
AGRICULTURAL BUSINESS AND PRODUCTION (1)	5	75	90.6%	133	70	216	222	117	360
AGRICULTURAL SCIENCE(2)	11	90	104.8%	154	92	310	257	153	517
CONSERVATION AND RENEWABLE NATURAL RESOURCES(3)	14	77	126.8%	186	45	347	311	76	579
ARCHITECTURE AND RELATED PROGRAMS(4)	10	90	154.1%	227	88	484	378	146	806
AREA, ETHNIC, AND CULTURAL STUDIES(5)	12	96	99.7%	147	65	276	244	108	461
COMMUNICATIONS(9)	39	94	89.5%	132	48	234	219	81	390
COMPUTER AND INFORMATION SCIENCES(11)	32	86	96.9%	142	68	210	237	114	350
EDUCATION(13)	71	58	86.6%	127	40	228	212	67	380
ENGINEERING(14)	133	84	195.2%	287	79	645	478	132	1075
ENGINEERING -- RELATED TECHNOLOGIES(15)	15	98	131.5%	193	112	284	322	187	474
FOREIGN LANGUAGES AND LITERATURES(16)	48	98	90.0%	132	55	251	220	91	418
HOME ECONOMICS(19)	24	94	92.9%	137	72	223	228	119	372
LAW AND LEGAL STUDIES(22)	11	28	87.5%	129	57	219	214	96	365
ENGLISH LANGUAGE AND LITERATURE/LETTERS(23)	43	93	71.0%	104	50	163	174	84	272
LIBERAL ARTS AND SC., GEN. STUDIES & HUMANITIES(24)	10	99	90.7%	133	40	207	222	67	345
BIOLOGICAL SCIENCES/LIFE SCIENCES(26)	55	92	101.3%	149	52	285	248	87	475
MATHEMATICS(27)	39	96	76.8%	113	61	170	188	102	283
MULTI/INTERDISCIPLINARY STUDIES(30)	7	88	89.1%	131	54	230	218	89	383
PARKS, RECREATION, LEISURE, AND FITNESS STUDIES(31)	17	94	74.6%	110	46	165	183	77	275
PHILOSOPHY AND RELIGION(38)	43	97	81.6%	120	74	197	200	124	328
PHYSICAL SCIENCES(40)	110	93	122.3%	180	59	386	300	98	644
PSYCHOLOGY(42)	39	90	72.1%	106	36	179	177	60	298
PROTECTIVE SERVICES(43)	7	95	55.5%	82	50	117	136	84	195
PUBLIC ADMINISTRATION AND SERVICES(44)	28	49	99.5%	146	33	337	244	55	561
SOCIAL SCIENCES AND HISTORY(45)	174	95	80.3%	118	42	309	197	69	515
VISUAL AND PERFORMING ARTS(50)	96	94	120.4%	177	72	334	295	119	556
HEALTH PROFESSIONS AND RELATED SCIENCES*(51)	68	83	126.3%	186	51	420	310	85	700
BUSINESS MANAGEMENT AND ADMINISTRATIVE SERVICES(52)	117	89	102.0%	150	39	278	250	66	464
TOTALS (AVERAGES)				147	59	275	246	98	459

*EXCLUDES MEDICINE AND DENTISTRY

Appendix C (2)

COMPREHENSIVE UNIVERSITIES AND COLLEGES
AVERAGE EXPENDITURES AND PERCENT
OF TOTAL AVERAGE EXPENDITURES PER STUDENT HOUR,
UNDERGRADUATE AND GRADUATE, BY DISCIPLINE

DISCIPLINE(CIP)	N OF PROG	% USCH	% TOT AV	AVG $ / USCH	MIN $/ USCH	MAX $/ USCH	AVG $ / GSCH	MIN $/ GSCH	MAX $/ GSCH
AGRICULTURAL SCIENCE(2)	6	100	100.0%	127	86	189	212	143	315
CONSERVATION AND RENEWABLE NATURAL RESOURCES(3)	6	98	78.4%	100	74	162	166	123	271
AREA, ETHNIC, AND CULTURAL STUDIES(5)	18	99	88.6%	113	36	211	188	60	351
COMMUNICATIONS(9)	67	98	92.2%	117	53	214	195	88	356
COMPUTER AND INFORMATION SCIENCES(11)	55	95	107.3%	136	50	258	227	83	430
EDUCATION(13)	**151**	**72**	**89.6%**	**114**	**25**	**214**	**190**	**42**	**357**
ENGINEERING(14)	60	85	195.4%	248	61	504	414	102	841
ENGINEERING -- RELATED TECHNOLOGIES(15)	33	99	150.1%	191	84	316	318	140	527
FOREIGN LANGUAGES AND LITERATURES(16)	70	99	94.1%	120	44	220	199	74	366
HOME ECONOMICS(19)	27	91	88.2%	112	47	205	187	79	341
LAW AND LEGAL STUDIES(22)	8	50	71.8%	91	24	143	152	41	238
ENGLISH LANGUAGE AND LITERATURE/LETTERS(23)	85	98	78.7%	100	45	154	167	75	257
LIBERAL ARTS AND SC., GEN. STUDIES & HUMANITIES(24)	16	100	87.2%	111	60	178	185	100	297
BIOLOGICAL SCIENCES/LIFE SCIENCES(26)	75	97	91.2%	116	37	234	193	62	390
MATHEMATICS(27)	71	98	74.6%	95	36	162	158	60	269
MULTI/INTERDISCIPLINARY STUDIES(30)	18	90	142.7%	181	34	437	302	57	728
PARKS, RECREATION, LEISURE, AND FITNESS STUDIES(31)	38	98	92.7%	118	64	224	196	107	373
PHILOSOPHY AND RELIGION(38)	65	100	72.8%	92	35	164	154	58	273
PHYSICAL SCIENCES(40)	163	99	114.9%	146	52	292	243	87	487
PSYCHOLOGY(42)	74	93	67.0%	85	38	154	142	63	256
PROTECTIVE SERVICES(43)	20	96	57.5%	73	18	111	122	29	185
PUBLIC ADMINISTRATION AND SERVICES(44)	42	64	91.5%	116	35	238	194	59	396
SOCIAL SCIENCES AND HISTORY(45)	274	99	80.1%	102	29	283	170	48	472
VISUAL AND PERFORMING ARTS(50)	185	98	133.4%	169	46	436	282	77	726
HEALTH PROFESSIONS AND RELATED SCIENCES*(51)	107	91	153.2%	195	47	491	324	78	818
BUSINESS MANAGEMENT AND ADMINISTRATIVE SERVICES(52)	224	91	101.9%	129	54	222	216	90	370
TOTALS (AVERAGES)				127	47	247	211	78	411

*EXCLUDES MEDICINE AND DENTISTRY

BACCALAUREATE UNIVERSITIES AND COLLEGES AVERAGE EXPENDITURES AND PERCENT OF TOTAL AVERAGE EXPENDITURES STUDENT CREDIT HOUR, BY DISCIPLINE

DISCIPLINE(CIP)	N OF PROG	% OF TOT AV	AVG $ / USCH	MIN $ / USCH	MAX $ / USCH
AREA, ETHNIC, AND CULTURAL STUDIES(5)	5	94.5%	185	87	239
COMPUTER AND INFORMATION SCIENCES(11)	8	116.4%	228	116	400
EDUCATION(13)	**16**	**79.0%**	**155**	**70**	**287**
FOREIGN LANGUAGES AND LITERATURES(16)	31	102.7%	201	74	352
ENGLISH LANGUAGE AND LITERATURE/LETTERS(23)	18	70.8%	139	76	221
BIOLOGICAL SCIENCES/LIFE SCIENCES(26)	19	90.4%	177	63	308
MATHEMATICS(27)	15	82.7%	162	68	291
MULTI/INTERDISCIPLINARY STUDIES(30)	5	98.0%	192	68	477
PARKS, RECREATION, LEISURE, AND FITNESS STUDIES(31)	5	172.3%	338	152	975
PHILOSOPHY AND RELIGION(38)	24	91.0%	178	71	331
PHYSICAL SCIENCES(40)	34	115.1%	226	60	391
PSYCHOLOGY(42)	16	68.1%	134	76	267
SOCIAL SCIENCES AND HISTORY(45)	64	69.4%	136	57	240
VISUAL AND PERFORMING ARTS(50)	40	129.1%	253	91	551
HEALTH PROFESSIONS AND RELATED SCIENCES*(51)	5	124.1%	243	137	323
BUSINESS MANAGEMENT AND ADMINISTRATIVE SERVICES(52)	16	73.9%	145	89	215
TOTALS (AVERAGES)			196	79	353

*EXCLUDES MEDICINE AND DENTISTRY

RESEARCH UNIVERSITIES
AVERAGE EXPENDITURES AND PERCENT
OF TOTAL AVERAGE EXPENDITURES PER STUDENT
CREDIT HOUR, BY DISCIPLINE
COMPARISON OF PROFESSIONAL PROGRAMS

DISCIPLINE(CIP)	N OF PROG	% OF TOT AVG	% USCH	AVG $ / USCH	MIN $ / USCH	MAX $ / USCH	AVG $ / GSCH	MIN $ / GSCH	MAX $ / GSCH
ARCHITECTURE(4.02)	22	95.5%	87.0%	190	137	252	317	229	420
EDUCATION(13)	**123**	**80.6%**	**62.0%**	**160**	**62**	**346**	**267**	**104**	**577**
ENGINEERING(14)	242	144.6%	77.0%	288	75	588	480	124	980
SOCIAL WORK(44.07)	17	55.6%	53.0%	111	85	169	200	142	282
NURSING(51.16)	18	126.8%	80.0%	252	135	365	421	225	608
PHARMACY(51.2)	10	119.8%	93.0%	238	109	336	397	182	561
ACCOUNTING(52.03)	30	75.4%	89.0%	150	86	199	250	143	331
TOTAL AVERAGE				199	98	322	333	164	537

DOCTORAL UNIVERSITIES
AVERAGE EXPENDITURES AND PERCENT
OF TOTAL AVERAGE EXPENDITURES PER STUDENT
CREDIT HOUR, BY DISCIPLINE
COMPARISON OF PROFESSIONAL PROGRAMS

DISCIPLINE	N OF PROG	% OF TOT AVG	% USC	AVG $ / USCH	MIN $ / USCH	MAX $ / USCH	AVG $ / GSCH	MIN $ / GSCH	MAX $ / GSCH
ARCHITECTURE(4.02)	8	81.0%	91%	142	88	207	236	146	344
EDUCATION(13)	**71**	**72.7%**	**58%**	**127**	**40**	**228**	**212**	**67**	**380**
ENGINEERING(14)	133	163.9%	84%	287	79	645	478	132	1075
SOCIAL WORK(44.07)	16	80.5%	67%	141	50	229	235	83	382
NURSING(51.16)	25	118.2%	85%	207	103	379	345	171	631
ACCOUNTING(52.03)	21	83.9%	92%	147	92	213	245	153	355
TOTAL AVERAGE				175	75	317	292	125	528

COMPREHENSIVE UNIVERSITIES AND COLLEGES
AVERAGE EXPENDITURES AND PERCENT
OF TOTAL AVERAGE EXPENDITURES PER STUDENT
CREDIT HOUR, BY DISCIPLINE
COMPARISON OF PROFESSIONAL PROGRAMS

DISCIPLINE	N OF PROG	% OF TOT AVG	% USCH	AVG $ / USCH	MIN $ / USCH	MAX $ / USCH	AVG $ / GSCH	MIN $ / GSCH	MAX $ / GSCH
EDUCATION(13)	151	69%	72%	114	25	214	190	42	357
ENGINEERING(14)	60	150%	85%	248	61	504	414	102	841
SOCIAL WORK(44.07)	25	71%	87%	117	69	205	196	116	342
NURSING(51.16)	44	123%	95%	203	86	372	339	143	619
ACCOUNTING(52.03)	48	85%	94%	140	84	222	234	140	370
TOTAL AVERAGE				165	65	304	274	108	506

AVERAGE COSTS FOR EDUCATION PROGRAMS, PER UNDERGRADUATE AND GRADUATE STUDENT CREDIT HOUR BY CARNEGIE CLASSIFICATION

CARNEGIE CLASSIFICATION	N OF PROG	% USCH	AVG $/ USCH	MIN $ / USCH	MAX $ / USCH	AVG $/ GSCH	MIN $ / GSCH	MAX $ / GSCH
BACCALAUREATE	16	100	155	70	287			
COMPREHENSIVE	151	72	114	25	214	190	42	357
DOCTORAL	71	58	127	40	228	212	67	380
RESEARCH	123	62	160	62	346	267	104	577

U.S. Department of Education
Office of Educational Research and Improvement (OERI)
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Title: Comparative Study of Expenditures Per Student Credit Hour of Education Programs to Programs of Other Disciplines and Professions	
Author(s): Hitz, Randy; Howard, Richard; Baker, Larry	
Corporate Source: Montana State University-Bozeman	Publication Date: Fall, 1997

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Sign here→ please	Signature:	Printed Name/Position/Title: Randy Hitz, Dean	
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		E-Mail Address: rhitz@montana.edu	Date: Oct 21, 1997

(over)

CLEARINGHOUSE ON TEACHING
AND TEACHER EDUCATION

ERIC

September 24, 1997

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Sincerely,

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Acquisitions/Outreach Coordinator